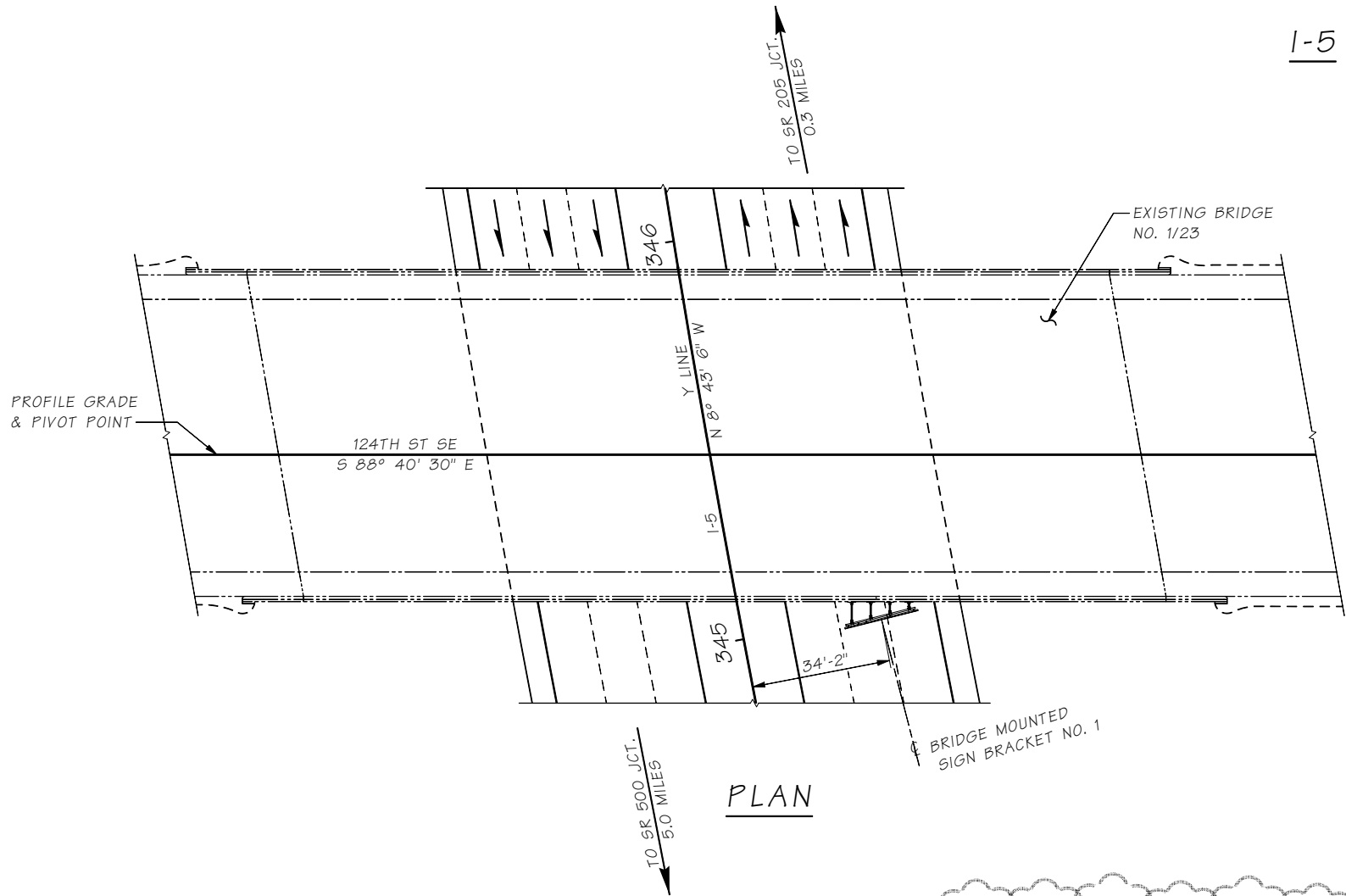


SEC. 26, T. 3N., R. 1E., W.M.
CITY OF VANCOUVER

1-5



PLAN

NOTE TO DESIGNER:
UPDATE PLAN VIEW TO MATCH YOUR PROJECT.
INCLUDE ONLY PROJECT ALIGNMENT INFORMATION
NECESSARY TO LOCATE THE SIGN AND BRACKET
ON THE BRIDGE.

LEGEND

- ⊙ $\frac{B}{15}$ IDENTIFIES SECTION OR VIEW
TAKEN OR SHOWN ON BRIDGE SHEET 15
- ⊙ $\frac{1}{-}$ IDENTIFIES DETAIL
TAKEN OR SHOWN ON THE SAME SHEET

GENERAL NOTES

- ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, DATED 2014 AND AMENDMENTS.
- SIGN SUPPORT COMPONENTS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, DATED 2009 AND INTERIMS, USING BASIC WIND SPEED OF 90 MPH AND 50 YEARS OF DESIGN LIFE.
- MATERIAL SPECIFICATIONS:

PLATES AND BARS	ASTM A 36
PIPES	ASTM A 53, GRADE B, OR ASTM A 500, GRADE B
BRACING ROD	ASTM A 307
BOLTS, NUTS & WASHERS (UNLESS NOTED OTHERWISE)	STD SPEC. 9-06.5(1)
U-BOLTS, LOCKNUTS & WASHERS (UNLESS NOTED OTHERWISE)	STAINLESS STEEL CONFORMING TO STD SPEC. 9-28.11
RESIN BONDED ANCHORS (ALL THREAD)	ALL THREADED ROD: ASTM F 593, TYPE 304 NUT: ASTM F 594, TYPE 304 WASHERS: ASTM A 240, TYPE 304
EPOXY BONDING AGENT	STD SPEC. 9-26.1 (TYPE IV)
- ALL NON-STAINLESS STEEL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 AFTER FABRICATION. BOLTS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232.
- SIZE OF FILLET WELDS SHALL BE $\frac{1}{4}$ " MINIMUM EXCEPT WHERE NOTED OTHERWISE.
- FOR W4X13 DETAILS SEE STANDARD PLAN G-90.10 AND G-90.40. WHERE W4X13 SPACING CONFLICTS WITH THE VERTICAL AND HORIZONTAL PIPE CONNECTION, THE SPACING MAY BE MODIFIED SO THE MAXIMUM SPACING DOES NOT EXCEED 6 FEET AND THE EDGE DISTANCE DOES NOT EXCEED 3 FEET.
- THE DIMENSIONS SHOWN IN THE PLANS ARE BASED ON CONTRACT RECORDS. THESE DIMENSIONS SHALL BE FIELD MEASURED AND VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION.
- RESIN BONDED ANCHOR HOLES SHALL NOT BE CORE DRILLED.

LAST REVISED ON: 2/16/2016

FILE NO. 10.1-A6-1
SHEET 1 OF 1

Bridge Design Engr.	M:\STANDARDS\Bridge Mounted Sign Brackets\1 - BMSB LAYOUT.MAN					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor						10	WASH.			
Designed By						JOB NUMBER				
Checked By										
Detalled By										
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D						

BRIDGE
AND
STRUCTURES
OFFICE

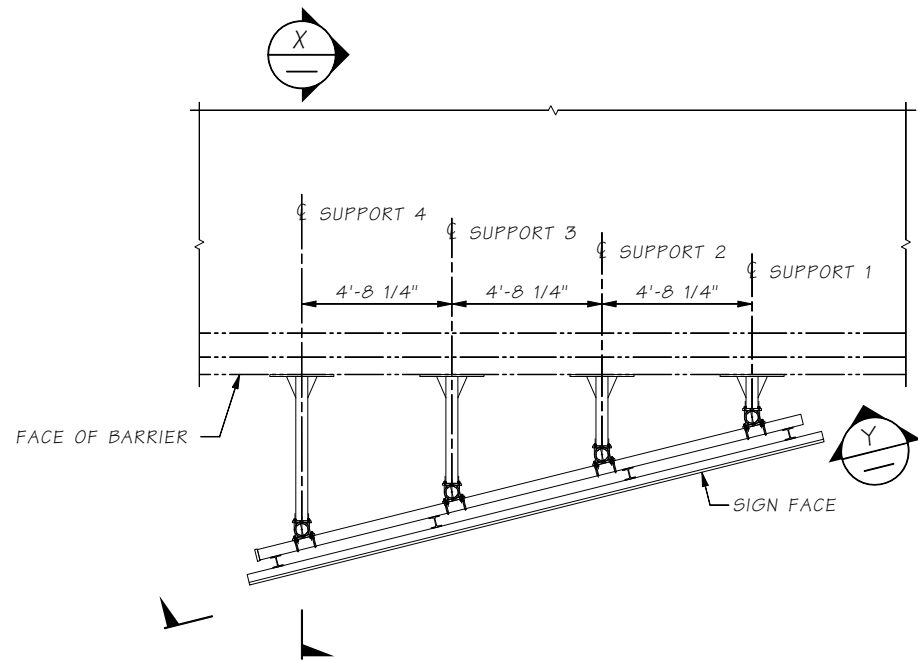


Washington State
Department of Transportation

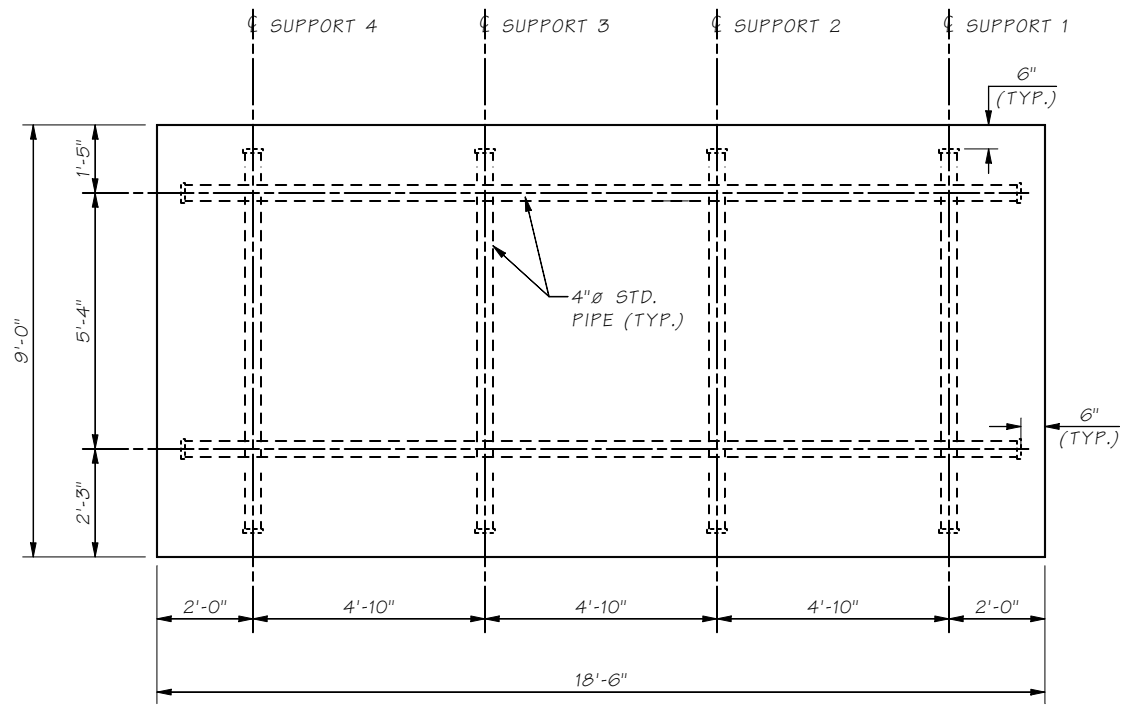
STANDARD
BRIDGE MOUNTED SIGN BRACKET

BRIDGE MOUNTED SIGN BRACKET NO. 1
LAYOUT

BRIDGE
SHEET
NO.
1
OF
SHEETS



PLAN
BRIDGE MOUNTED SIGN BRACKET NO. 1



VIEW Y

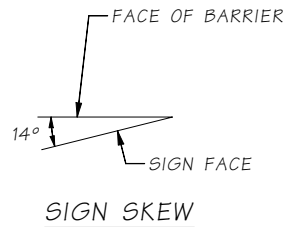


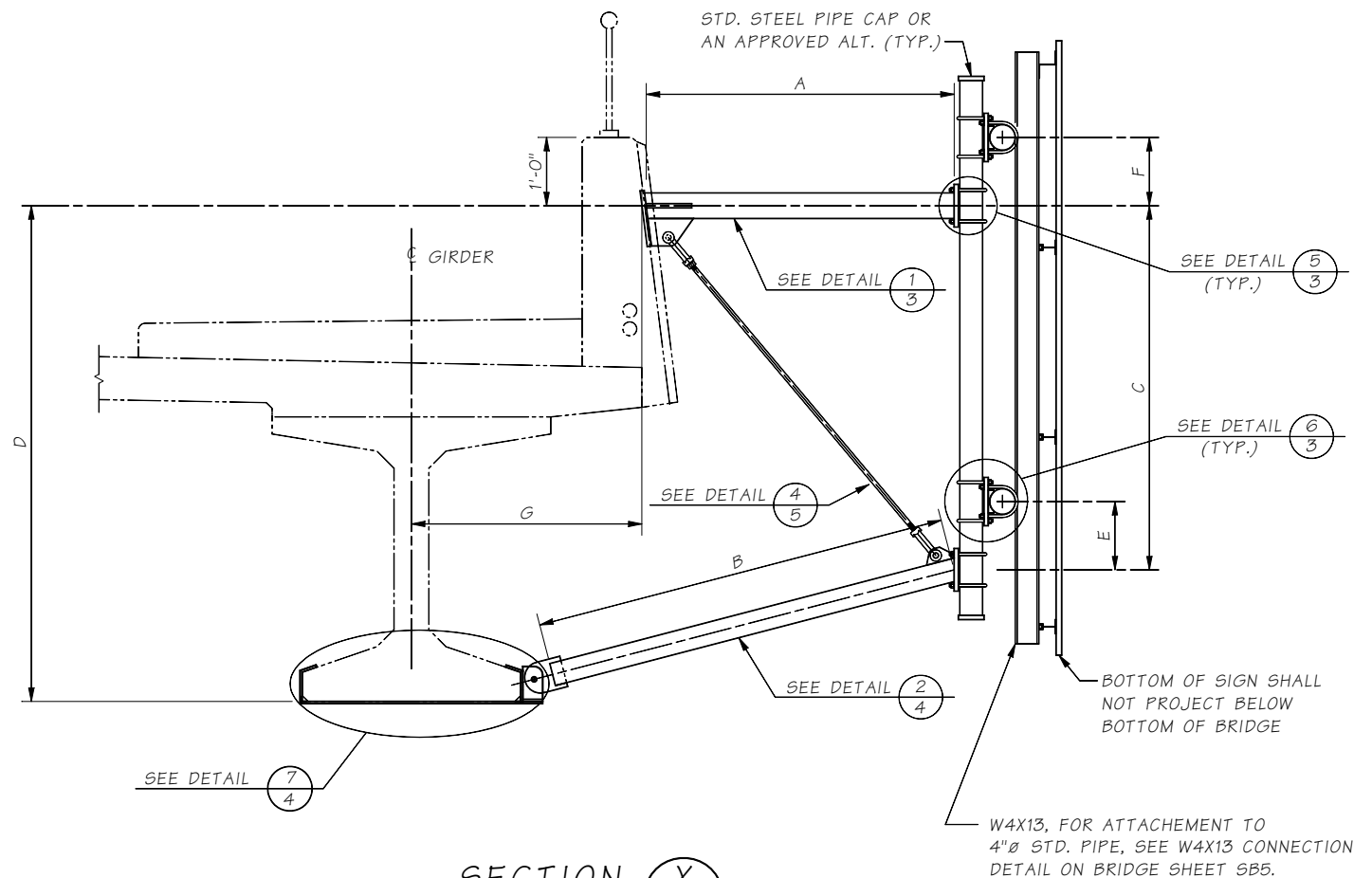
TABLE OF DIMENSIONS

SIGN BRACKET	LOCATION	SIGN SKEW	SIGN NO.	SIGN LENGTH	SIGN HEIGHT
1	SEE PLAN	14°	12	18'-6"	9'-0"

PIPE SIZE	TOP ARM LENGTHS				BOTTOM ARM LENGTHS			
	A1	A2	A3	A4	B1	B2	B3	B4
4"Ø	1'-0"	2'-2"	3'-4½"	4'-6½"	4'-10¾"	6'-0¾"	7'-2¾"	8'-4½"

BRACING LENGTHS		CANTILEVER LENGTHS		C	D	G
L3	L4	E	F			
4'-3"	5'-2½"	1'-0"	1'-0"	4'-8"	7'-3½"	3'-4½"

D & G DIMENSIONS ARE BASED ON PLANS AND SHALL BE FIELD MEASURED PRIOR TO FABRICATION OF BRACKET ARMS AND BRACE. (ADJUST E AND F DIMENSIONS TO PLACE SIGN HORIZONTALLY)



SECTION X
SHOWN AT SUPPORT 4,
DETAILS ARE SIMILAR
AT SUPPORTS 3, 2 & 1

LAST REVISED ON: 03/10/2014

1 SHEET NO. 10.1-A6-2

Bridge Design Engr.	M:\STANDARDS\Bridge Mounted Sign Brackets\2 - BMSB GEOMETRY.MAN	REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By		JOB NUMBER				
Checked By						
Detalled By						
Bridge Projects Engr.						
Prelim. Plan By						
Architect/Specialist	DATE	REVISION	BY	APP'D		

Mon Apr 25 08:12:10 2016

BRIDGE
AND
STRUCTURES
OFFICE

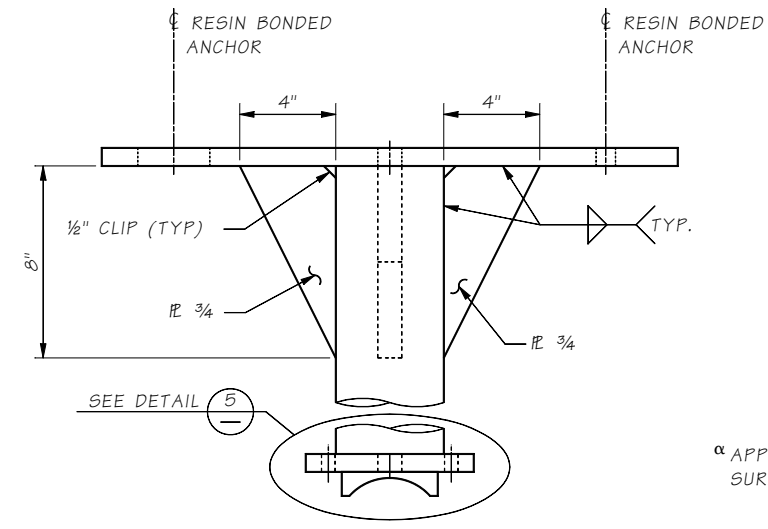
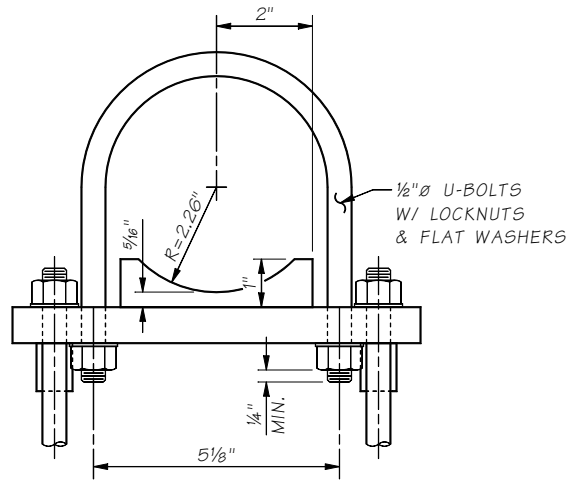
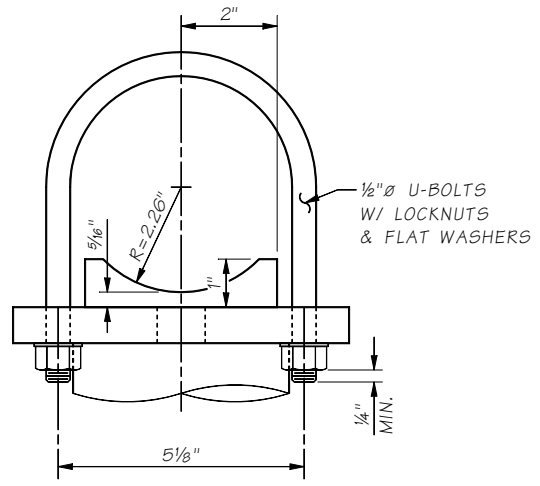


STANDARD
BRIDGE MOUNTED SIGN BRACKET

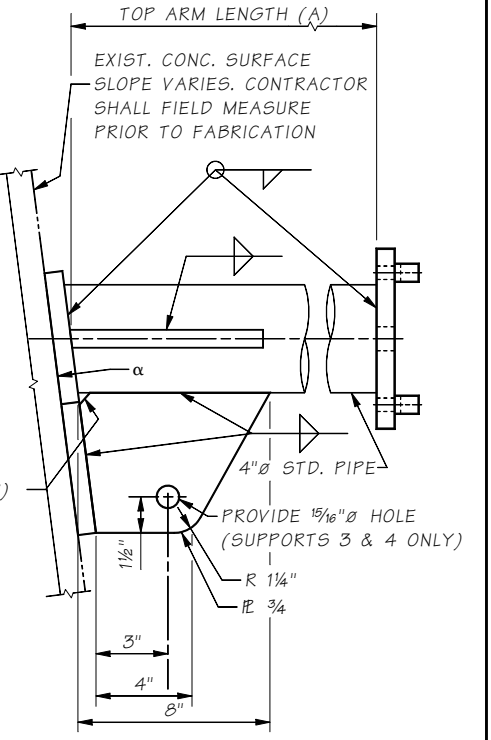
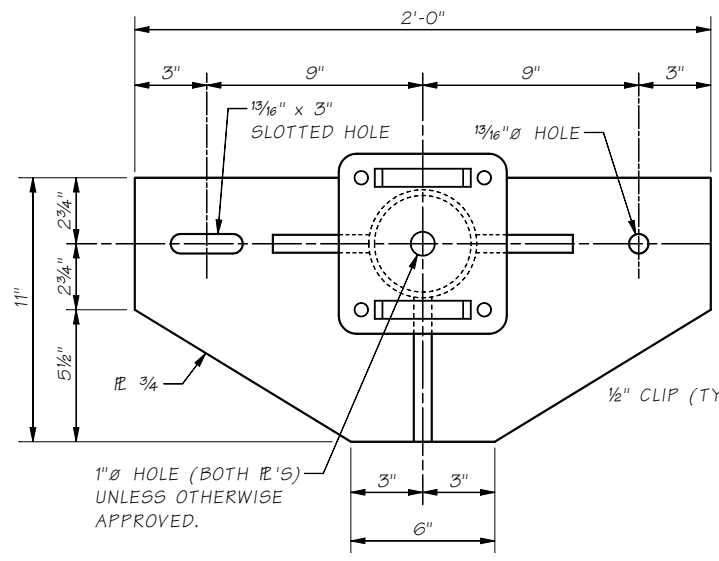
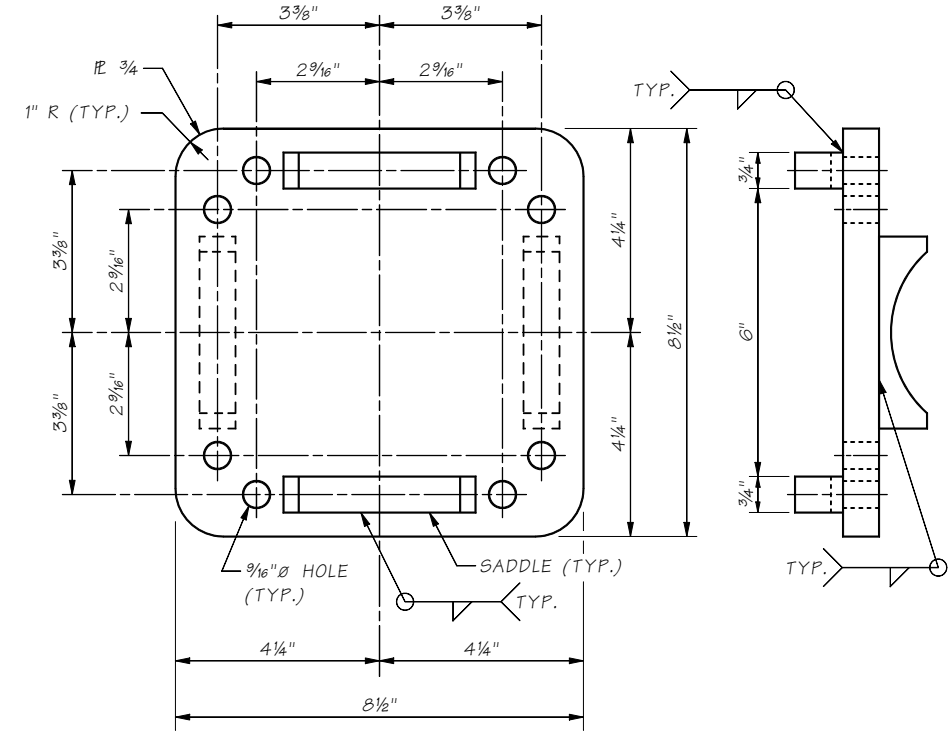
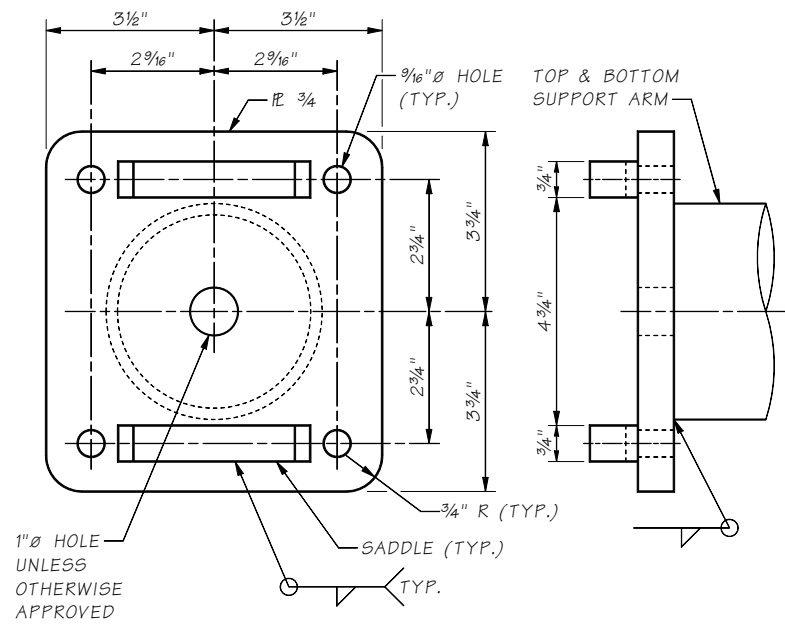
BRIDGE MOUNTED SIGN BRACKET NO. 1
GEOMETRY

BRIDGE SHEET NO.
2
OF
SHEETS

NOTES TO DESIGNER:
1. REMOVE CALL OUTS AND LINEWORK IF BRACING ROD IN NOT USED.
2. SHOW FORWARD OR BACK FACING SLOPE FOR TOP BRACKET ARM.



α APPLY EPOXY BONDING AGENT TO SURFACE FOR UNIFORM BEARING



DETAIL 5
2 & 3

DETAIL 6
2

DETAIL 1
2

LAST REVISED ON: 9/4/2014

10.1-A6-3
SR
FILE NO. 10.1-A6-3
SHEET 1 OF 3

Bridge Design Engr.	M:\STANDARDS\Bridge Mounted Sign Brackets\3 - BMSB DETAILS 1 OF 3.MAN	REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By		JOB NUMBER				
Checked By						
Detalled By						
Bridge Projects Engr.						
Prelim. Plan By						
Architect/Specialist	DATE	REVISION	BY	APPD		

Mon Apr 25 08:12:10 2016

BRIDGE AND STRUCTURES OFFICE



STANDARD BRIDGE MOUNTED SIGN BRACKET

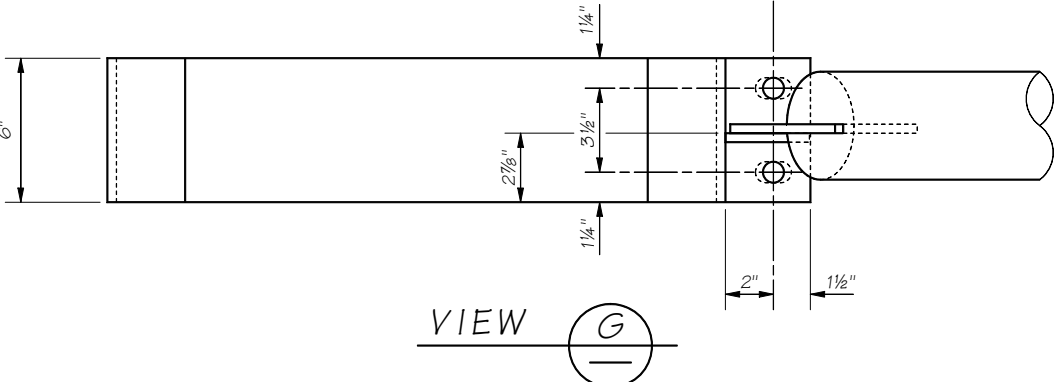
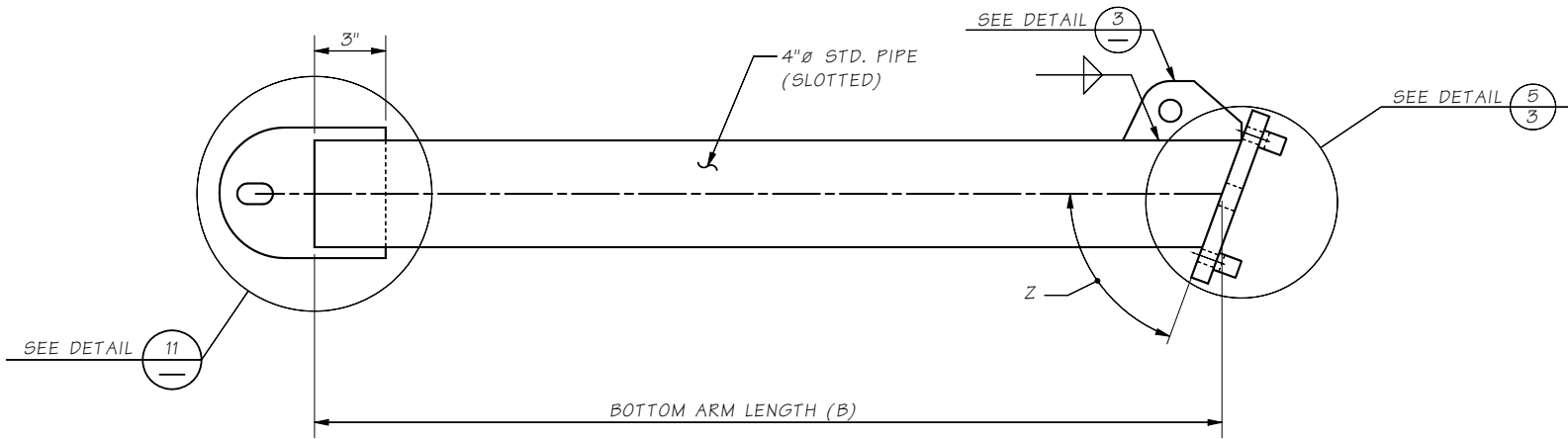
BRIDGE MOUNTED SIGN BRACKET
DETAILS 1 OF 3

BRIDGE SHEET NO.	3
SHEET	OF
SHEETS	

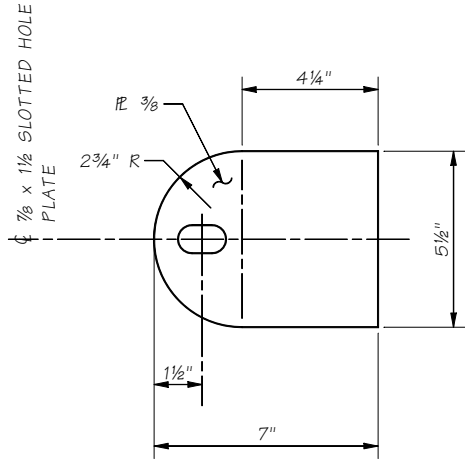
SIGN BRACKET NO.	Z° (CONTRACTOR TO VERIFY)			
	SUPPORT #1	SUPPORT #2	SUPPORT #3	SUPPORT #4
1	78°	72°	66°	60°

NOTES TO DESIGNER:
1. REMOVE DETAIL C IF BRACING ROD IN NOT USED. ALSO
REMOVE CALL OUTS AND LINEWORK FROM OTHER DETAILS.

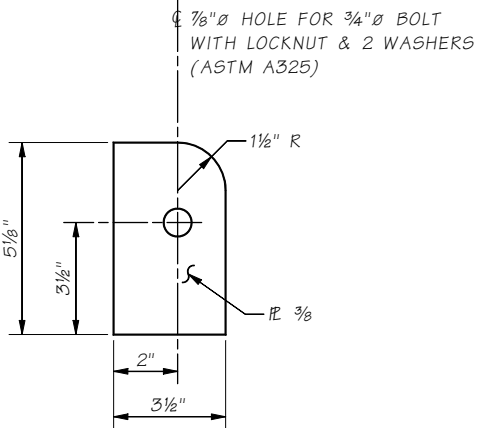
2 ~ 7/8" x 1 1/2" SLOTTED HOLES (BOT. PLATE)
2 ~ 7/8" HOLES (TOP PLATE)
2 ~ 3/4" BOLTS W/ WASHER (ASTM A325)
TOP AND 2 1/2" x 3/8" x 2 1/2" WASHER BOTTOM.
PLACE BOLT WITH NUT ON UNDERSIDE.



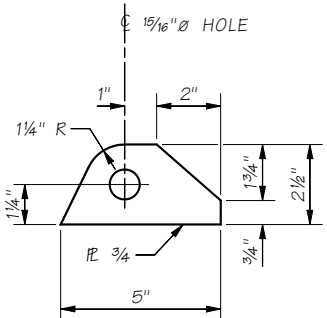
DETAIL 2



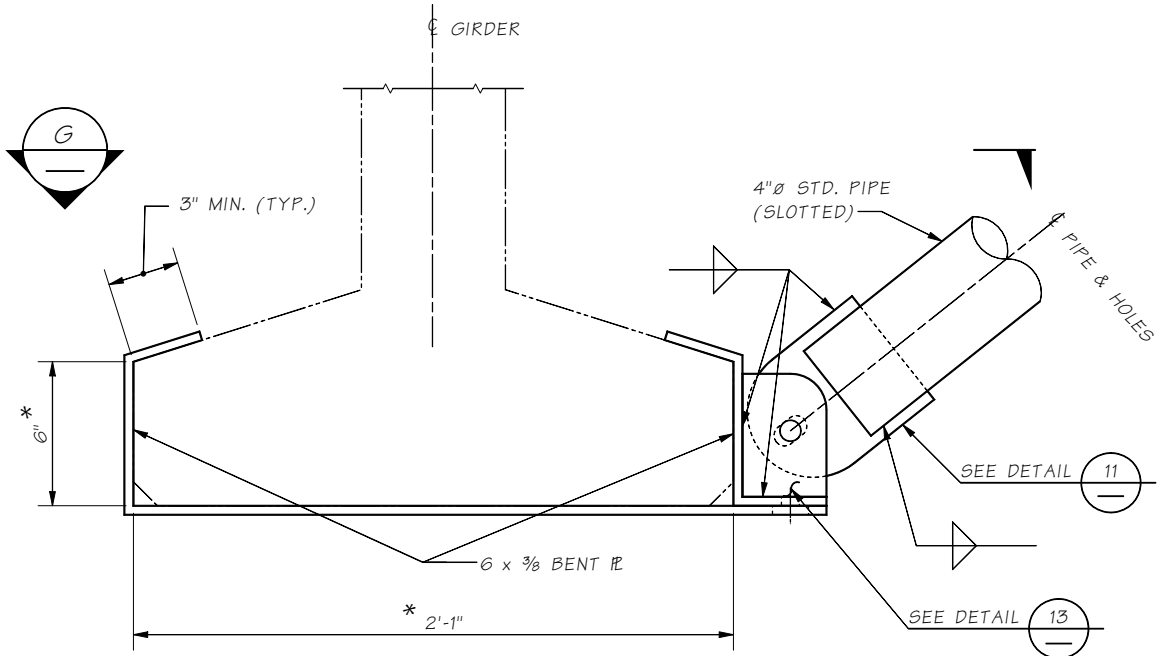
DETAIL 11



DETAIL 13



DETAIL 3



DETAIL 7

* CONTRACTOR TO
FIELD VERIFY PRIOR
TO FABRICATION

Bridge Design Engr.	M:\STANDARDS\Bridge Mounted Sign Brackets\4a - BMSB DETAILS 2 OF 3 - WF GIRDER.MAN	REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By		JOB NUMBER				
Checked By						
Detailed By						
Bridge Projects Engr.						
Prelim. Plan By						
Architect/Specialist	DATE	REVISION	BY	APP'D		

BRIDGE
AND
STRUCTURES
OFFICE



STANDARD
BRIDGE MOUNTED SIGN BRACKET

BRIDGE MOUNTED SIGN BRACKET
DETAILS 2 OF 3

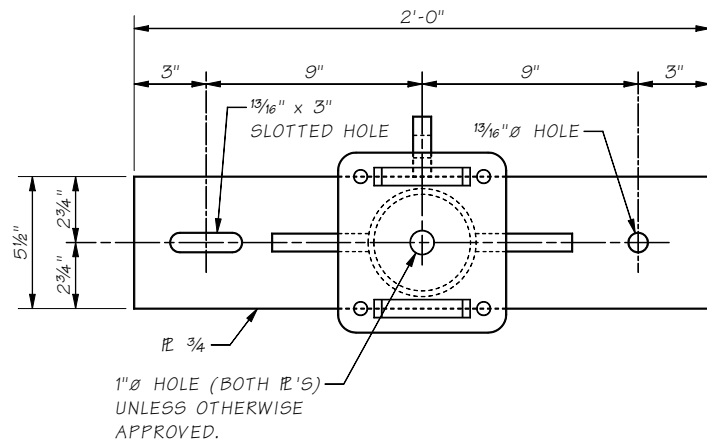
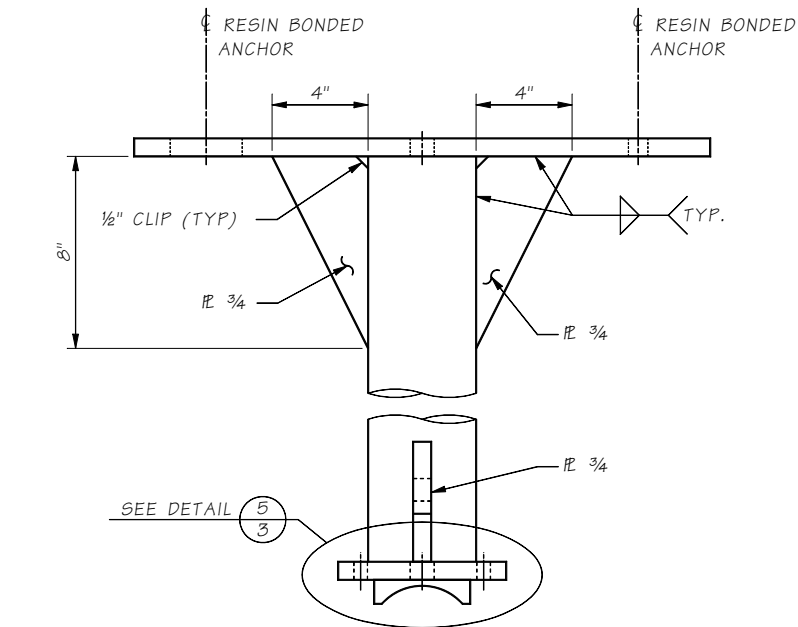
BRIDGE SHEET NO.
4
SHEET
OF
SHEETS

LAST REVISED ON: 03/10/2014

1 SHEET NO. 10.1-A6-4

LAST REVISED ON: 03/10/2014

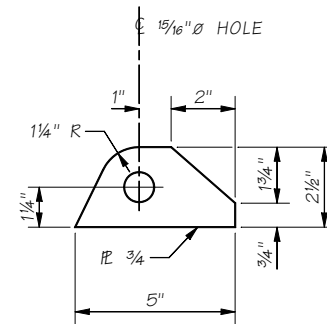
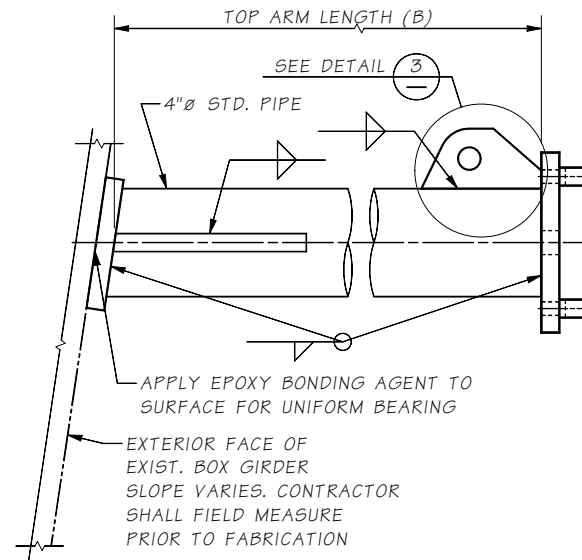
SR FILE NO. Job SHEET 1



DETAIL 2/2

NOTES TO DESIGNER:

1. REMOVE DETAIL C IF BRACING ROD IS NOT USED. ALSO REMOVE CALL OUTS AND LINEWORK FROM OTHER DETAILS.
2. SHOW FORWARD OR BACK FACING SLOPE FOR BOTTOM BRACKET ARM.
3. INCLUDE GENERAL NOTE FOR NON-DESTRUCTIVE LOCATING OF REINFORCING AND PT DUCTS IF MOUNTING TO POST TENSIONED BOX GIRDER BRIDGE



DETAIL 3/1

Bridge Design Engr.	M:\STANDARDS\Bridge Mounted Sign Brackets\4b - BMSB DETAILS 2 OF 3 - CONCRETE TUB GIRDER.MAN	REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Sup	10	WASH.			
Designed By	Designer	Date				
Checked By	Checker	Date				
Detaild By	Detailer	Date				
Bridge Projects Engr.						
Prelim. Plan By						
Architect/Specialist	DATE	REVISION	BY	APP'D		

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BRIDGE AND STRUCTURES OFFICE



Project Title 1
Project Title 2
Project Title 3
Structure Name

BRIDGE MOUNTED SIGN BRACKET
DETAILS 2 OF 3

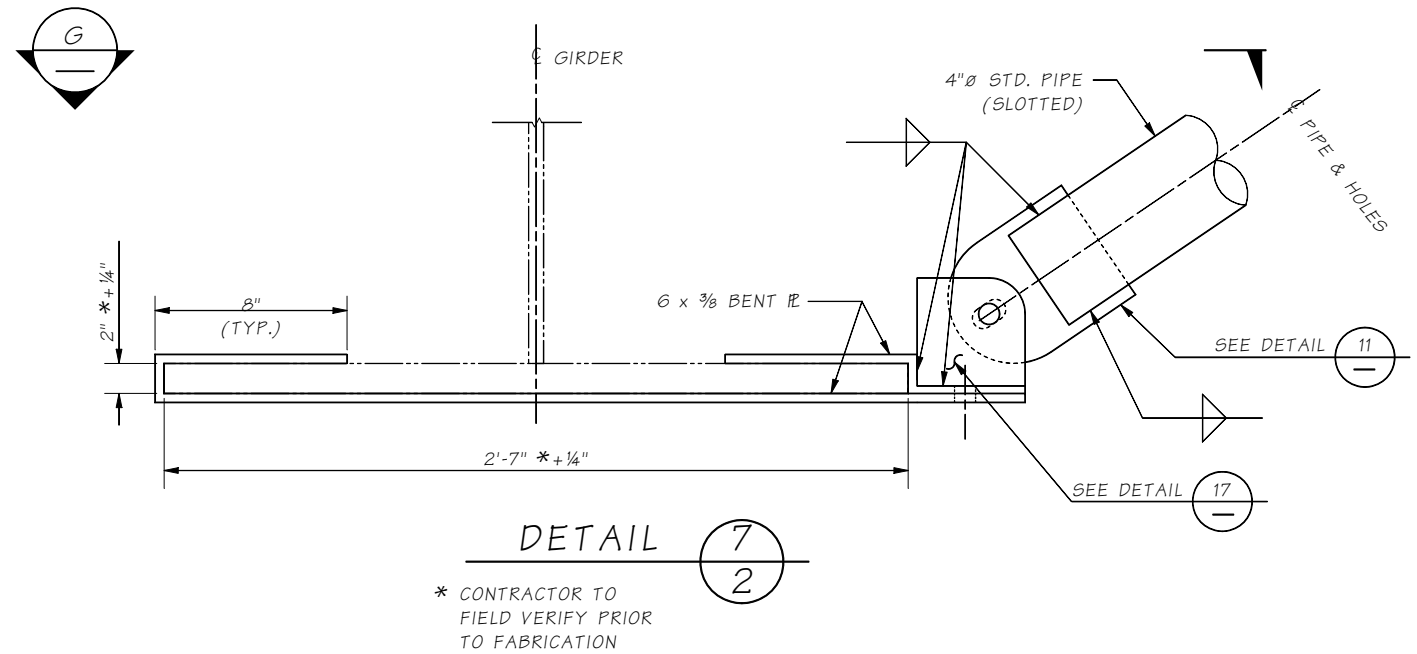
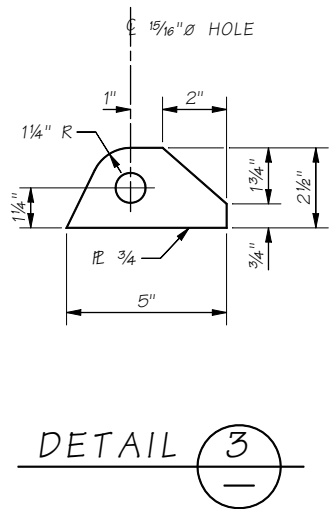
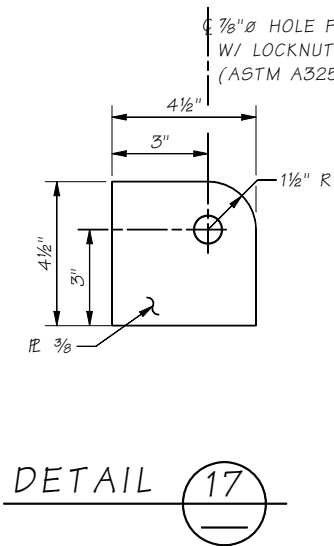
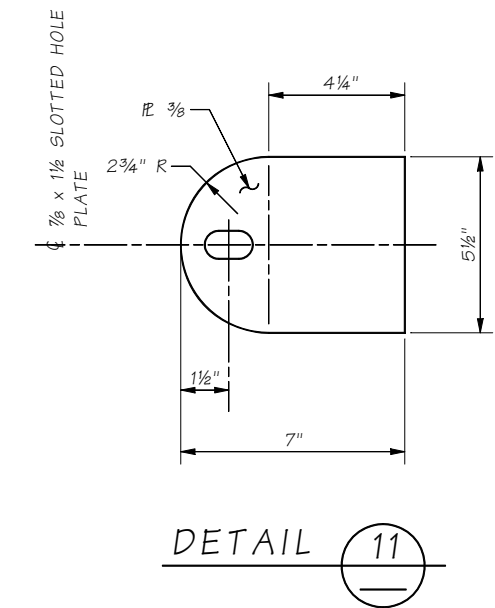
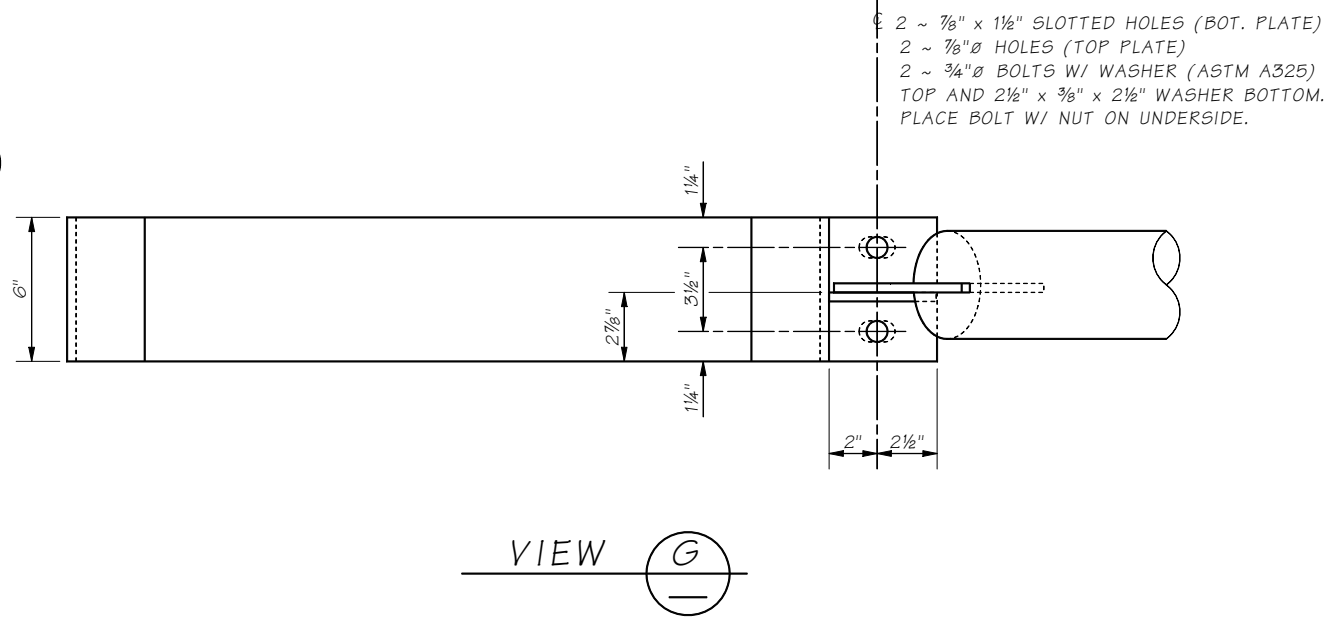
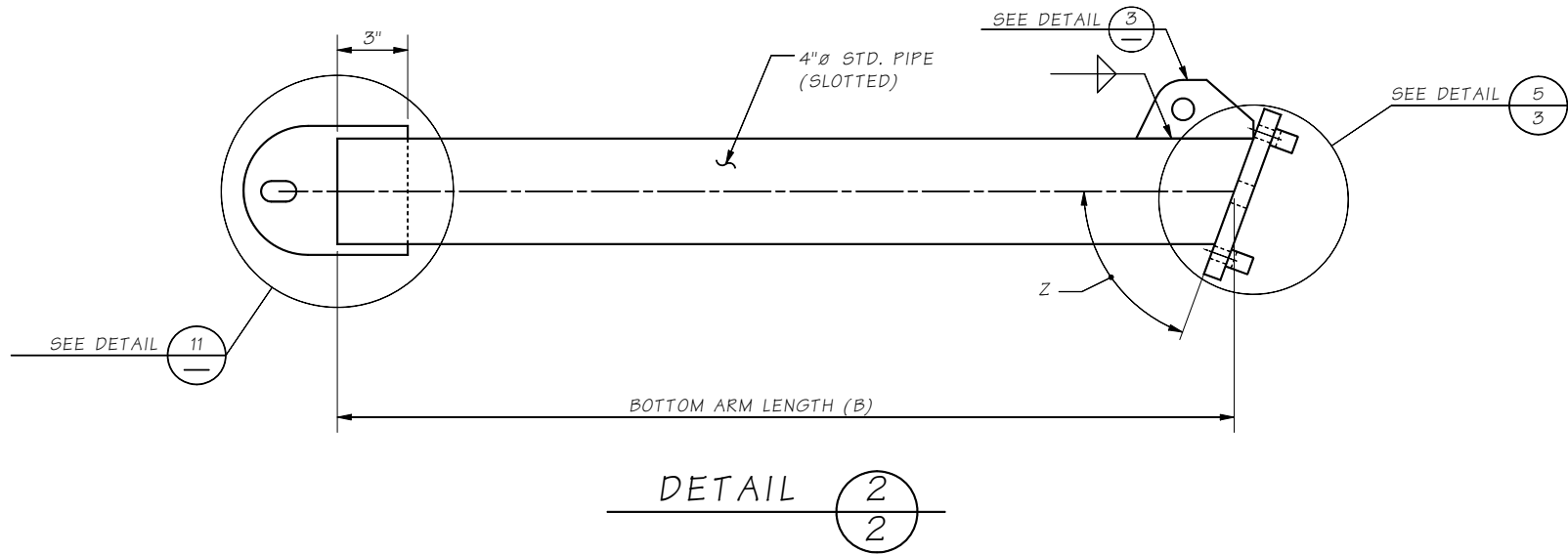
BRIDGE SHEET NO. 4
SHEET OF SHEETS

LAST REVISED ON: 03/10/2014

SR FILE NO. 1 SHEET 1 OF 4

SIGN BRACKET NO.	Z° (CONTRACTOR TO VERIFY)			
	SUPPORT #1	SUPPORT #2	SUPPORT #3	SUPPORT #4
1	78°	72°	66°	60°

NOTES TO DESIGNER:
1. REMOVE DETAIL C IF BRACING ROD IN NOT USED. ALSO
REMOVE CALL OUTS AND LINEWORK FROM OTHER DETAILS.



Bridge Design Engr.	M:\STANDARDS\Bridge Mounted Sign Brackets\4c - BMSB DETAILS 2 OF 3 - STEEL GIRDER.MAN	REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Sup	10	WASH.			
Designed By	Designer	Date				
Checked By	Checker	Date				
Detalled By	Detailer	Date				
Bridge Projects Engr.						
Prelim. Plan By						
Architect/Specialist	DATE	REVISION	BY	APPD		

Mon Apr 25 08:12:12 2016

BRIDGE
AND
STRUCTURES
OFFICE

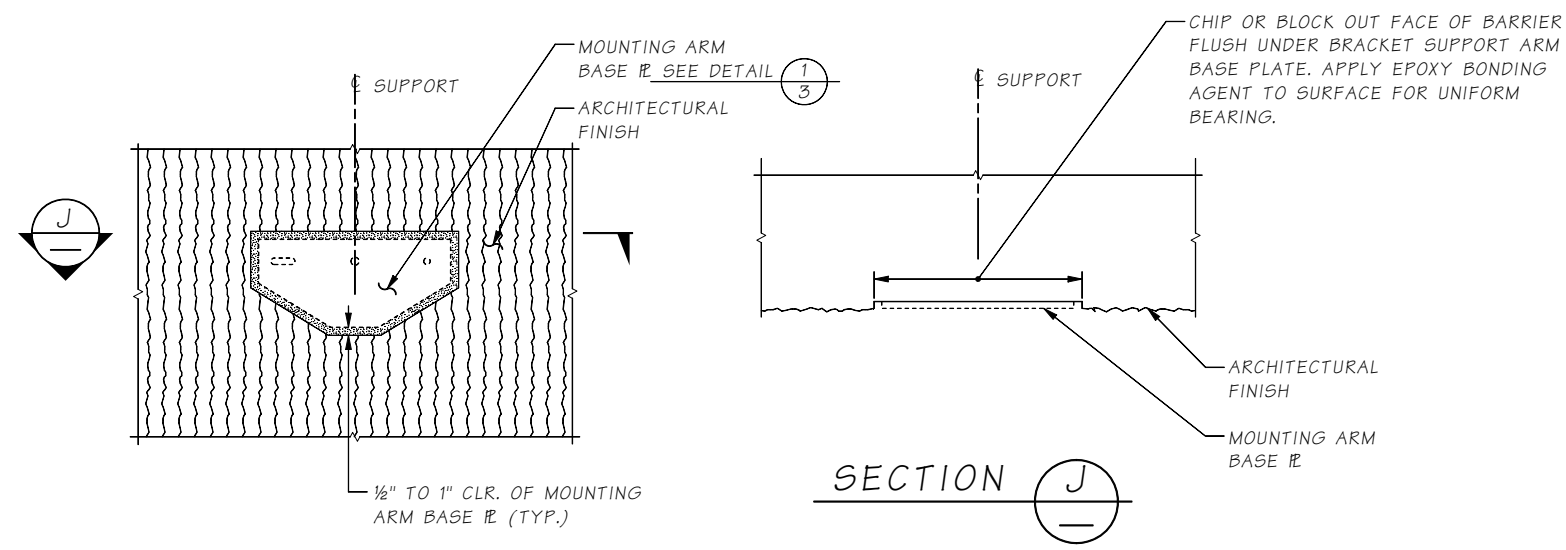


Project Title 1
Project Title 2
Project Title 3
Structure Name
BRIDGE MOUNTED SIGN BRACKET
DETAILS 2 OF 3

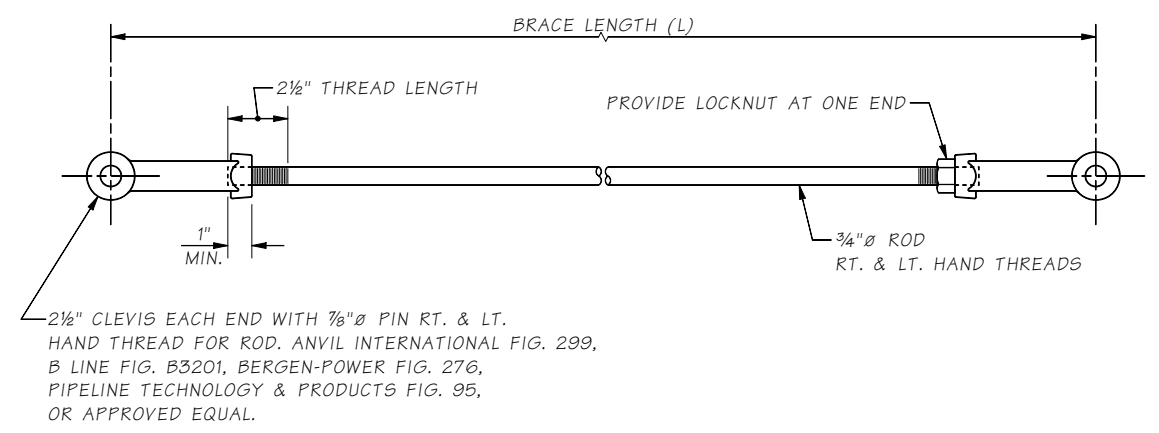
BRIDGE
SHEET
NO.
4
SHEET
OF
SHEETS

LAST REVISED ON: 03/11/2014

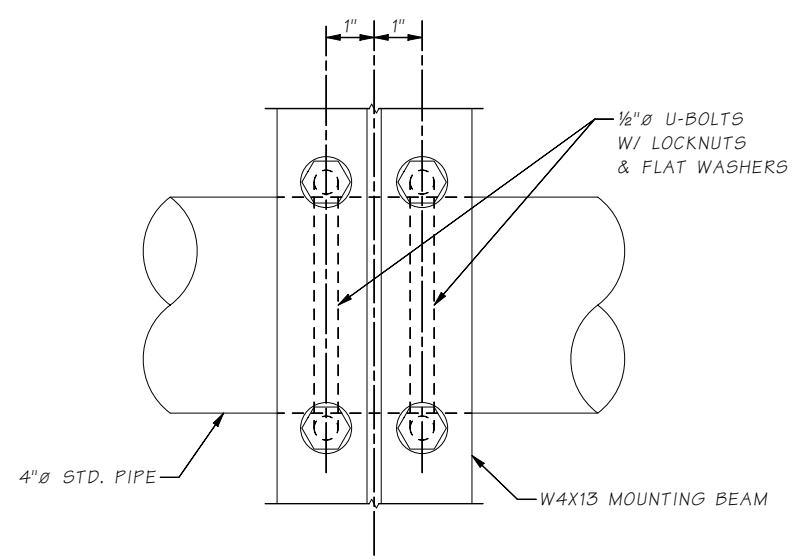
1
SHEET
NO.
10.1-A6-5



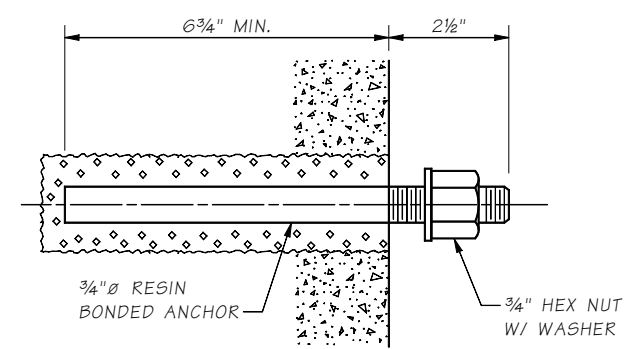
ARCHITECTURAL FINISH TREATMENT



DETAIL 4/2

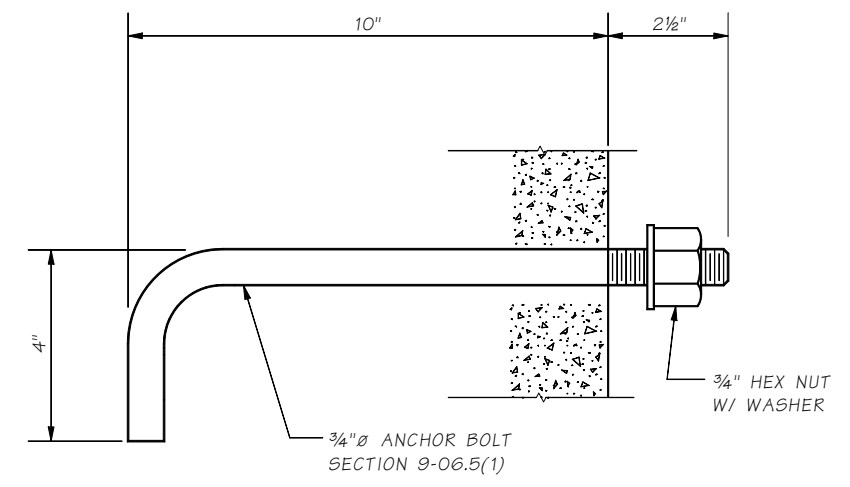


W4X13 CONNECTION DETAIL



RESIN BONDED ANCHOR DETAIL

INSTALL RESIN BONDED ANCHOR NORMAL TO CONCRETE SURFACE



ALTERNATE ANCHOR DETAIL

INSTALL ANCHOR NORMAL TO CONCRETE SURFACE. FOR NEW CONSTRUCTION ONLY.

Bridge Design Engr.	M:\STANDARDS\Bridge Mounted Sign Brackets\5 - BMSB DETAILS 3 OF 3.MAN	REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By		JOB NUMBER				
Checked By						
Detail By						
Bridge Projects Engr.						
Prelim. Plan By						
Architect/Specialist	DATE	REVISION	BY	APP'D		

Mon Apr 25 08:12:12 2016

BRIDGE
AND
STRUCTURES
OFFICE



STANDARD
BRIDGE MOUNTED SIGN BRACKET

BRIDGE MOUNTED SIGN BRACKET
DETAILS 3 OF 3

BRIDGE
SHEET
NO.
5
SHEET
OF
SHEETS